Slide 9: The Statutory and Functional Requirements of Recovery Plans
Now, let's learn about the technical side of recovery planning.

Slide 10: The Statutory Requirements of Recovery Plans
Recovery plans are required under Section 4(f) of the Endangered Species Act.

Formal recovery starts at listing. But recovery activities can and should start before the listing of a species. The Fish and Wildlife Service, for instance, often begins to work with landowners, managers, and groups knowledgeable about a species at the point when a species is identified, or when it becomes a candidate, for listing. Effective candidate conservation **programs** may even preclude the need to list a species.

Similarly, while a recovery plan is still being developed, work can and should begin on obvious, high-priority recovery actions. The recovery plan formalizes things, in a way we'll discuss next.

Finally, species can be exempted from full recovery planning, but only if a formal determination indicates a plan won't promote their recovery. That's a high bar; only about a dozen of more than 1,300 domestic, listed species are exempt. Most are exempt because they are believed to be extinct, like the Eskimo curlew and the Bachman's warbler.

Slide 11: The Statutory Requirements of Recovery Plans
Recovery plans should delineate, justify, and schedule actions to recover a species. Each recovery plan, "to the maximum extent practicable," *shall* include several things:

- Site-specific, management actions needed for recovery;
- Objective, measurable criteria leading to delisting; and
- Time and costs required to carry out the plan.

Note use of the words, "shall, to the maximum extent practicable." They're not just recommendations. The statute requires them, within the limits of our capabilities. Sometimes there just isn't sufficient information to do so. A recovery plan needs to justify such omissions, indicate what information is necessary, and state how we'll collect it in the future.

Do all measureable criteria have to be numeric? No. Remember the importance of reducing threats to the species. Some criteria may require certain management practices for a species' habitat, or other such 'measures' that can't be counted.

Estimating the time and costs to recovery can be the hardest parts for biologists, who are not versed in the calculation of the cost of fencing or other items. That is where our recovery partners that manage lands, such as BLM, can be very helpful.

Slide 12: The Statutory Requirements of Recovery Plans

Before final approval of a new plan or its' revision, agencies must provide public notice, and review and comment opportunities. They must consider all information presented during the comment phase.

Such requirements ensure an open and transparent process, providing opportunities for input and feedback by both other Federal agencies and the general public. In a final listing rule, we usually announce the pending development of a recovery plan and begin to seek relevant information. In some cases, specific notices and invitations for input go to known or potential stakeholders, supplemented by notices in local newspapers.

In addition, every Federal agency, not just the Fish and Wildlife Service and National Marine Fisheries Service, must consider all information presented during the public comment period.

Public involvement in the development of plans leads to more of a sense of public ownership in the plan … and the likelihood of more participation during the implementation phase.

Slide 13: The Functional Requirements of Recovery Plans

The statute only requires three elements for recovery plans – measurable, objective criteria; site-specific recovery actions; and estimates of time and costs. But recovery plans serve another**, crucial,** role as outreach to the public and potential partners.

That's why recovery plans must make a compelling case why a specific strategy and suite of recovery actions are the best approach for the recovery of a species. Plans should include a description of the biology and inherent vulnerabilities of species, an analysis of threats, and a clearly-articulated recovery strategy.

Slide 14: The Functional Requirements of Recovery Plans

Older recovery plans tended to focus on the required elements and were useful to the biologist assigned as the lead for the species, but they were more likely to be served as doorstops for most others.

Others are more likely to partner with the Service to implement a plan if they understand the train of logic that lead to the specific recovery strategy and recovery actions laid out in the plan.

Inherent vulnerabilities refers to things like the endemic species with narrow ranges that are likely more vulnerable to perturbations of their habitat and the like. Inherent vulnerabilities are the non-negotiable items in a species' life history that force us to focus more on abating external threats such as degradation of habitat or invasive species.

Hence the Services' recovery planning guidelines call for information in addition to the statutory requirements in order to provide an explanation of the selected strategy for recovery (for example, captive breeding, reduction of which threats in what order, etc.)

Slide 15: The Functional Requirements of Recovery Plans

Most recovery plans focus on a single species. They may be well-known only to a few people, occur in a limited area or on land with only one or two land owners, and there may be no other listed species in the area.
But there are reasons to include multiple species in certain recovery plans.

In Hawaii, a number of plans address all listed species on an island. The habitat and threats are usually quite similar. It saves repetition to describe them in general once, and add any specifics that apply only to one species. Multiple-species plans also make it easier for landowners and land managers to consult a single document, instead of deciphering how many different and potentially redundant plans might apply to their location. An example of such a multi-species plan is the Molokai plant cluster recovery plan for 17 different Hawaii plants.

In some cases, a unique ecosystem – usually rare and imperiled itself – contains a number of listed species. A recovery plan may address generic threats to both ecosystem and species. Remember, one of the Endangered Species Act's purposes is to conserve ecosystems upon which endangered and threatened species depend. The Ash Meadows recovery plan in Nevada (home of the desert pupfish) covers 12 listed species and a dozen more candidates.

Slide 16: The Functional Requirements of Recovery Plans
Some recovery plans may be developed by a single person – either an agency biologist or an expert on the species – but they can also be done by a state agency, a recovery team, or contracted out.

Slide 17: The Functional Requirements of Recovery Plans
The Act does not require a recovery team. It simply provides for one if an agency decides one would be useful in developing a recovery plan. About half of the current recovery plans were developed by teams.

Slide 18: The Functional Requirements of Recovery Plans
A team can be useful when a species' range spreads over a wide span of land ownership, or if recovery needs merit broad involvement by other agencies and the public in agency decisions. Teams foster working relationships that earn respect, promote long-term partnerships, and greater commitment from those partners in recovery decisions and actions. Recovery teams with multiple perspectives also identify issues and expose assumptions or faulty logic more readily than single authors or agencies.

A wide-spread endangered species like the Florida manatee might need biologists, land managers, non-governmental organizations, and boating groups on its recovery team. A breadth of expertise addresses differences of opinions at the beginning, helping to create potential partnerships with others who will help to implement the recovery plan.

Large recovery teams can also be cumbersome. The process for developing a recovery plan may slow down. Agreement among a diverse number of parties and interests takes time. But it may give you a jump start on implementation of the plan, which is our next topic.